Index

Abscission process, of fruit, initiating with chemicals, 49–50
Action for Food Production, 296
Adhesives, use of synthetics, 69
Affluence, effect on farm market, 62; effect on food marketing system, 95
Africa, coffee export, 254–255; diets, 252
Agency for International Development, role in agricultural development of Third World, 295, 296, 297–298, 301–302
Agrarian creed, 23
Agribusiness, future, 342–346
Agribusiness Council, Inc., 297–298
Agricultural Adjustment Act, 118, 132, 240, 244, 260
Agricultural Conservation Program, 240, 241
Agricultural Marketing Agreement Act, 103
Agricultural Trade Development and Assistance Act, 276–277, 282; *see also* Public Law 480
Agriculture, advances, sources, 299, 301–302; as industry, diversity, 322–323; business units, changes, 323–324; changes in, 2–10, 322–324; changes in, assessments of benefits, 31–39; commodity policies and programs, 117–123; contribution to U.S. balance of payments, 261, 263; contributions to society, assessment, 224; Department of, cooperating with trade organizations for foreign markets, 277–278, 279, 281; enterprises, purposes, 322; foreign markets, developing, 276–281; future, changes, 342–346; future, technologies, 322–326; future, use of electronic data processing, 324–325; in developing countries, importance of technology, 298–307; in developing countries, new approaches, 293; international, outlook, 347–351; international, protectionist trade policies, 269–270; labor force, 345; major nonfood markets, 67; mechanical revolution 2–3; new technologies, drawback, 304, 306–307; output, increasing to meet needs of developing countries, 289–290; policies, interrelations with aid and trade, 244–246; policy, developing, 130–134; productivity, factors affecting, 207; products, measuring quality, 91; relation to economic development, 249–251; research, in developing countries, 293–297; semi-arid, perfecting, 202–203; statistics, compiling, 113–117; systems approach, 325–326; technological advances, sources, 299, 301–302; technological changes, effects, 224–225, 352–357; technological revolution, 3, 5; technologies, 298–307; technology, transfer to developing countries, 302; trade promotion methods, 266; U.S., exports and imports, value, 255
Aid, Federal, to local governments, 160; foreign, total U.S. investment, 295–296
Airfreight, ton-miles, 334
Air transport, importance to food industry, 333–337
ALAR, growth regulator, 48
Allard, H. A., 35
American Farm Bureau Federation, 30
Amish, adherence to traditional values, 186–187
Ammonia, anhydrous, use as fertilizer, 36
Anderson, William Dyer, 224–229
Animal products, exports, 259
Anson County, obtaining adequate water supply, 177–178
Antibiotics, use in feed rations, 60
Appalachian Land Stabilization and Conservation Program, 241
Apples, abscission process, use of chemicals to initiate, 49–50; biennial bearing, problems, 47–48; Delicious, problem of unproductivity, 48; drop, prevention, 48–49; fresh, storage environments, 51–52; industry, changes in, 47–52; McIntosh, fruit drop susceptibility, 49; McIntosh, wholesale prices, 52; mechanical harvesting, 49, 51; scald, control, 52; spray thinning, 48; storage problem, 51; use of growth-regulating chemicals, 48, 49; yield, annual, 47
Arizona, use of cropland for urbanization, 209
Asia, effect of new rice varieties, 294; rice consumption, 252, 253; rice production revolution, 312–316

Bailey, Warren R., 2–19, 136–142
Baker, Gladys L., 25–31
Balers, hay, automatic, output, 54
Barley, high protein-high lysine variety, breeding, 329
Barlow, Frank D., Jr., 282–287
Beef, consumption, 113; consumption, increase, 62; feed conversion efficiency, 5
Berry, Brian, 165
Bird, Alan R., 162–167
Bird, Kermit, 70–89
Bird, Ronald, 158–162
Bishop, C. E., 352–357
Blum, John C., 102–107
Borchert, John, 165
Bowe, Lynn, 28
Brazil, agricultural development, role of the United States, 316–320; agriculture, 319–320; coffee production, 254; cooperatives, 318–319; farmers, improving credit services, 319; market news service, developing, 317–318; school lunch program, 320
Bread, low-calorie, creating, 80–89
Breakiron, Philip L., 333–337
Broilers, diseases, 60–61; feed-conversion, efficiency, 5; feed rations, 60; feeding systems, capacity, 57; industry, changes in, 54; industry, efficient production methods, 58, 59

Butler, James L., 52–57
Byerly, T. C., 31–39

CACM, *see* Central American Common Market
California, farm marketings, cash receipts, 20; use of cropland for urbanization, 209
Canada, food aid to underdeveloped countries, 283
Capron, Horace, 302
Cattle, confinement production, problems, 61; feed-conversion efficiency, 5; feeder, diseases, 61; feeder, preconditioning for shipping, 61; feeding, use of feedlots, 7; feeding, use of synthetics, 69; feedlots, 58; feedlots, capacity, 57; feedlots, increasing, 36; raising, expansion of areas, 8
Central American Common Market, 267–268, 271
Cereal, imports, 272; improving nutritional quality, 326–330; new variety, 330; production, effect of hybrids, 327; protein content, 327–328; use in combatting world hunger, 326–330
Chandler, Robert, 313
Chemicals, growth-regulating, use by apple growers, 48, 49; use in initiating abscission process in fruit, 49–50; use in mechanical harvesting of cotton, 42
Cherries, mechanized harvesting, effect on system, 332; mechanical harvesting, use of abscission-initiation spray, 50–51
Chickens, consumption, 113; hybridization, 34; *see also* Broilers
Children, needy, feeding, 124–126
China, wheat imports, 254, 271, 272
Christensen, Raymond P., 287–292
Cities, function, changes in, 140
Clawson, Marion, 337–342
Coffee, imports, 261; international trade agreement, 268, 269; world trade patterns, 254–255
Colombia, effect of food aid on economic development, 285
Colorimeter, 93
Colwick, Rex F., 39–46
Commercial Protein Food Studies Program, 297
Commission system, of rural government, 155
Commodities, farm, with support programs, 118; perishable, lack of support programs, 118–119; programs, major changes in, 119–123; support programs, distribution of gains, 121–122
Commodity Distribution Program, 126, 128
Common Agricultural Policy, 264
Commonwealth Sugar Agreement, 269
Communities, bypassed, 168–173; interdependence between rural and urban, 149–150; origins, 169; rural, achieving quality living, 174–175; rural, causes of disintegration, 181; rural, disadvantages, 143–144, 145; rural, in jet age, 149–153; rural, job opportunities, 168, 169; rural, obtaining adequate housing, 178, 181; rural, public services, 158–162; rural, public services, problems, 141–142; rural, reorganizing, 153; rural, reviving, 173–181; rural versus urban, interrelationships, 136–142
Computers, role in food marketing system, 71, 76–77
Conservation, costs, who should pay, 236–242; Federal programs, 240–241; investment, amount needed, 238; programs, State participation, 240
Containerization, value in air transporting, 335, 337
Containers, role in food marketing system, 71–73, 75
Cook, Harold T., 89–94
Cooperatives, in Brazil, 318–319
Copp, James H., 143–148
Corkern, Ray S. 66–70
Corn, crop, 113; hybridization, effect on yield, 3; production, 3; production, in Kenya, 308; production areas, 7; protein content, research, 328, 329; quality deterioration, prevention, 93; uses, 113; yield in 1920, 2; yield increase, causes, 35, 36; yields, 327
Corn Belt, average yields, 3
Cotner, Melvin L, 204–212
Cotton, bale, man-hours needed to produce, 39; consumption, 259; defoliation, 42; domestic mill consumption, 64; exporters, 255; foreign market promotion, 279; ginning, improvements, 42, 45, 46; harvesters, types, 42; harvesting, adjustments, 40; increased yields, 42; insects, new techniques in eradication, 42; lint cleaners, development, 45; lint quality, maintaining, 42, 45; lint yields, increase, 3; machine harvested, percent, 42; machine harvested, problems, 42, 45; mechanization, 39–46; packaging system, 46; planting, new procedures, 40–41; processing, use of improved gin stands, 45; production adjustments, 40; production areas, 7–8; quality, measuring, 93; stick and green leaf machine, 45; U.S. exports, 259; unloading system, problems, 45–46; weed control, new methods, 41; world consumption, per capita, 255; yield in 1920, 2
Counties, cooperative planning, 162–167; development areas, 164–165; government, reorganizing, 155; population, causes of changes, 168–169; rural, cooperating, 142; rural, obtaining adequate water supply, 177–178
Countries, underdeveloped, problems, 287–292
Countryside, special pollution problems, 223
Credit, for crop production, securing, 15–17
Credit services, to Brazilian farmers, improving, 319
Crop Reporting Board, 113
Cropland, acreage, 249; acreage, decreases, 191, 205–206, 207, 221; conservation practices needed, 194; conversion to other uses, acres, 193; use for urbanization projects, 209
Cropland Conversion Program, 241
Crops, cash receipts, 19; consumption trends, 62, 64; custom harvesting, 14; improvement, through technology, 302; increased yields, role of pesticides, 37; mortgaging for financing of expendables, 15–16; most important money makers, 19–20; producer contracts, 17; production, estimates, 113–117; production, increases, 33; surpluses, problem to developing nations, 306–307; yield increases, 5; yield increases, factors promoting, 35–36; yields in 1920, 2
Crossbreeding, importance to meat production, 59

Daft, Lynn M., 168–173
Dairy products, imports, 260
Dalrymple, Dana G., 298–307
Daly, Rex F., 342–346
Dan River Water Association, Inc., 177
Data, agricultural, obtaining, 116–117
Dehydrators, use in haymaking, 56
Destler, Mac, 312–316
Diets, relation to income, 252
Diseases, broilers, 60–61
Dunham, Denis F., 107–112
Dunn, L. C., 34
Durost, Donald D., 2–10

East, E. M., 33
Eastern Europe, agricultural exports and imports, 274; agricultural trade with U.S., 274, 275–276; economic development, 274; per capita income, 274; role in grain trade, 271, 272
Eating places, effect of convenience foods, 78–80
Economic growth, relation to trade, 245–246
Economies, foreign, effects of food aid, 284–285
Education, in rural areas, 158
EEC *see* European Economic Community
EFTA, *see* European Free Trade Association
Eggs, production, industrialization, 34
Employment, farm, 289; opportunities, in rural communities, 168, 169
Enterprise, private, role in agricultural development of Third World, 296–297; private, source of agricultural technology in developing countries, 301
Environment, effects of modern farming technology, 224–225; natural, increased public awareness, 241–242; rural, maintaining quality of, 213–224; rural, regulating esthetics, 224–229
Erosion, problems, 222
European Agricultural Guidance and Guarantee Fund, 265
European Economic Community, common agricultural policy, 270–271; export subsidies, 265; import levies, 264; imports from United States, 265; preferential trading arrangements, 268; protectionism of agricultural commodities, 256–257; protein meal imports, 259; trade agreement, 264–265, 268; trade policies for agricultural products, 243
European Free Trade Association, 265–266, 271; imports, 266
Evanson, Robert, 299
Exports, agricultural, 64; agricultural, effects of protectionism, 256–257; agricultural, importance of food aid programs, 287; agricultural, payment assistance, 256; agricultural, U.S. share, 256, 257; by air, major commodities, 334; EEC, 265; farm, leading receivers, 64; Kenya, 309; subsidies, among EEC members, 265; support programs, 119; U.S., to CACM, 268; U.S., to EEC,

265; U.S., value, 255; world, U.S. share, 256
Extension Service, 130

Fairways Farms Corp., 199–200
Farm boys, occupational plans, study, 29
Farmers, buying power, 23; commercial, life philosophy, 185; contribution to agricultural technologies, 299; effect of convenience foods on, 78; effect of synthetics on, 69–70; income, 19–25; increased purchasing of production needs and services, 9–10; modern, procedures followed, 40; net income, 239; opinion of farming as way of making a living, 28–29; rotating, 11; share of food dollar, 111; small, opinion of corporate farms, 29–30
Farmers Home Administration, 177, 178
Farming, a way of life, 25–31; changes, 2–10, 164; changes in life style, 10; changes in income, 10; changes in orientation, 5–6; commercialization, causes, 250; custom services available, 14; effect of hybridization, 3, 5; effects of technological revolution, 12; future, projections, 342–346; man-hours required, 3; mechanical revolution, 2–3; production credit, securing, 15–17; regional distributions, 20; services, custom hiring, 12; technological revolution, 3, 5
Farmland, availability in developing countries, 250; renting, 11, 12
Farm machinery, custom hiring, 14; developing, 2–3; financing, 13–14; renting, 14
Farm ponds, number, 193
Farm production, effect of protectionism, 256–257
Farm products, EEC trade policies, 245; exporting, methods, 256; export-payment assistance, 256; home consumption, 20; import value, 259; markets, projected increases, 344; pricing, government intervention, 117–123; quality, maintaining, 89–94; U.S., exports, 255–259; uses, world trends, 251–255
Farms, corporate, reactions of small farmers, 29–30; decrease in number, 8–9; dwellings, gross rental value, 20; financial management, revolution, 10–19; future, output, 346; Great Plains, making viable, 200; gross income, 239; historical, re-creating, 229–236; historical, research sources, 235–236; income, 19–25; income, invested in conservation, 239; increased specialization, 9; large, increase, 24; marketings, cash receipts, 19; money crops, most important, 19–20; number, decline, 24; number, future, 345–346; population, decline, 25, 35, 62; population, future, 345; production, expenses, 23; production, management, 11; production goods expenditures, 10; residents, income, 24–25; technology, waste disposal problem, 37; value-of-sales, variations by size, 24
Faught, William A., 61–66
Federal marketing agreement and order program, 102–107
Feed Grains Council, 278
Feed conversion, efficiency, 5
Feed rations, formulating, 60
Feedlots, for cattle, 7; cattle, capacities and locations, 57, 58; cattle, increasing, 36; increased use of, 207–208; problems stemming from, 36–37
Fibers, natural, decline in market, 64
Fibrograph, 93
Flood Control Act, 240
Flowers, cut, amount air-shipped, 334
Foods, canned, storage life, 94; consumption, factors affecting, 251; consumption, in developed and less developed countries, 287; consumption trends, 62, 64; convenience, effect on farmers, 78; convenience, role in food marketing system, 71, 77–79; cost, 192; distribution, role of cargo jets, 333–337; dried, deterioration prevention, 94; factory processing, 99; frozen, deterioration prevention, 94; manufacturing plants, 99; marketing, causes of rising expenses, 107–108; marketing orders, 102–107; marketing system, basic elements, 70–71; marketing system, changes, 94–102; new, creating, 80–89; potential demands, 289; processing, off farm, 6–7; production, and population growth, 247–251; production, changes in system, 330–333; production vs. demand, in developing nations, 347–349, 350; programs, effect on farm market, 62; quality, maintaining, 89–94; raw materials, values, 107; retail prices, setting, 98; retailing, causes of cost reduction, 95–96; retailing, problems, 97–98; supplemental, program for expectant mothers and young children, 128–129; world problem, factors affecting, 251–255; world production, increase rate, 248
Food aid, export methods, 256; policies, changes in, 246; to underdeveloped countries, 282–287
Food Aid Convention, 268–269
Food and Agriculture Organization, 252
Food and Nutrition Service, 128
Food for Peace, role in developing Brazilian agriculture, 319–320; *see also* Public Law 480; Agricultural Trade Development and Assistance Act
Food for Peace Act, 246
Food for Peace Program, 256–257
Food Stamp Program, 126–128
Food stores, independent, effect of affluence on, 97; *see also* Supermarkets
Food system, use of contracts, 332–333; vertical integration, 330–331
Ford Foundation, agricultural research in developing countries, 293, 294, 295, 301
Forest, and woodland, area occupied, 208
Forest land, privately owned, conservation practices needed, 195; use, changes in, 208
Forests, National, multiple-use management, 221
Foundations, private, agricultural research in developing countries, 293–295, 296
Fox, Karl, 164
Fridley, Kenneth, 27–28
Fruit, abscission process, initiating with chemicals, 49–51; and vegetables, domestic shipments, 334; and vegetables, exports, 259; and vegetables, imports, 261; measuring quality, 91; mechanical harvesting, 49–52
Functional Economic Areas, 164
Fungicides, use in controlling apple scab, 47

Garner, W. W., 35
Gasser, William R., 251–255
General Agreement on Tariffs and Trade, 244, 260, 263, 276
General Treaty on Central American Economic Integration, 267
Gins, cotton, improved, 42, 45
Gin stands, for cotton, improving, 45
Glade, Edward H., Jr., 61–66
Governments, county, reorganizing, 155; local, Federal and State aid, 156, 160, 161; local, number in U.S., 166; local, sources of revenue, 160, 161; rural, problems, 145; rural, services, 154; rural, structure and change, 154–158; rural, types, 154–155; State, sources of revenues, 160–161; urban, experimentation, 155–156
Goza, Mrs. E. C., 26
Grahmann, S. J., 26
Grain, amount shipped as food aid, 283; cargo restrictions, 275; coarse, world trade, 254; demand vs. output in developing nations, 347–348; feed, foreign market promotion programs, 278; feed, U.S. exports, 257; high-yielding, value to developing countries, 290–291; market, effect of East-West trade, 271–272; production, increases, 298; world eating patterns, 252–253; world trade patterns, 253–254; *see also* Cereals
Grain sorghum, *see* Milo
Grapes, cash receipts, 20
Great Plains, farms, making viable, 200; land use program, 200–201; restoration of, 197–204
Great Plains Agricultural Council, 201
Great Plains Committee, 200
Great Plains Conservation Program, 203, 240–241
Green Revolution, 249–250, 290–291
Gross national product, expected increase, 343; in developed and less developed countries, 287, 289

Haber, Fritz, 36
Hady, Thomas F., 158–162
Harvesters, machine, for cotton, 42
Hay, baled, percent of total production, 54; handling, new methods, 54, 56–57; harvesting, changes in methods, 52–57; silage, 57; tons sold off farm, 54
Haymaking, use of dehydrators, 56
Health services, in rural areas, 158–160
Heifer Project, 296
Hekman, Edward J., 124–130
Herbicides, use in cotton weed control, 41
Hocking, William E., 183
Hodges, Earl F., 57–61
Hoffman, M. B., 47–52
Hogs, feed conversion efficiency, 5
Hoofnagle, William S., 66–70
Hopper unit, for transporting food, 73
Horses, air-exported, value, 334
Hostetler, John, 187

Houck, James, 301
House, James, 302
Housing, adequate, in rural areas, 178, 181
Hsu, Francis L. K., 182–183
Hunger, combatting, 124–130; world, combatting with cereals, 326–330
Hybridization, chickens, 34; effects on farming, 3, 5
Hydrometers, use in measuring sugar content, 92

Imports, agricultural, controls, 269–270; agricultural, pounds, 334; agricultural, U.S., 259–261; CACM, from U.S., 268; EEC, 265; EFTA, 266; LAFTA, 267; levies, among EEC members, 264; U.S., regulating, 260
Income, disposable, increase, 62; effect on eating patterns, 252; farm, 10, 19–25; farm, averages, 24; farm, from nonfarm sources, 24; farm, percentage invested in conservation, 239
India, cereal imports, 272; farmers, nitrogen fertilizer cooperative, 296; population, 294; Punjab, increased agricultural output, 290
Indians, life philosophy, 187
Indicative World Plan, 347–348
Industrialization, effect on population changes, 169–170
Industry, apple, changes in, 47–52; contribution to new agricultural technologies, 302
Insects, cotton, new techniques in eradication, 42
Institutions, governing, revising to meet contemporary needs, 172; rural, problems, 145
Integration, in farm marketing system, 65–66; vertical, in food system, 330–331
International Center of Tropical Agriculture, 295
International Coffee Agreement, 268, 269
International Grains Arrangement, 268, 283, 347
International Institute for Cotton, 279
International Institute of Tropical Agriculture, 295
International Rice Research Institute, 249, 294, 301, 313, 329
International Sugar Agreement, 269
International Wheat Agreement, 268
International Wheat and Corn Improvement Center, 294, 301
Interzonal Trade Agreements, 276
Irrigation, increased acreages, reason for, 37
IR–8, role in rice revolution of Asia, 313; yields, in Vietnam, 314–315
Israel, role in advancing agricultural technology, 302

Japan, egg consumption, per capita, 278; regulating imports, 257; U.S. wheat imports, 257
Jehlik, Paul J., 149–153
Jets, cargo, dimensions, 335; cargo, ground handling delays, 336–337; cargo, production, 335–336
Johnson, D. Gale, 244–246, 347–351
Jones, D. M., 35
Jull, Morley, 34

Kaldor, Donald, 29
Kellogg, Charles, 36
Kellogg Foundation, agricultural research in developing countries, 295
Kennedy Round of Negotiations, 244, 260, 263–264, 347
Kenya, agricultural productivity, 308–309; agricultural research, 309–310; agriculture, history, 307; dual agricultural system, 307–308; economic development, major problems, 311–312; education system, 310–311; employment, 308; exports, 309; land ownership problems, 310; population, growth rate, 311
Knowles, Malcolm, 149
Knox, C. W., 34
Koenig, Edward, 292–298
Kwashiorkor, 329

Labor, effect on food marketing costs, 110; farm, percent, 231
LAFTA *see* Latin American Free Trade Association
Land, adequately treated, percentages, 194; competition for, projections, 210; conservation era, beginning, 193; contour farmed, acres, 193; in Kenya, ownership problems, 310; non-crop uses, shifts to, 206; providing, for multiple uses, 189–196; resources, competition for, 204–212; resources, concern for wise use, 211–212; retirement program, 132; rural, non-Federal, acres, 191; sales value, increase, 210–211; special uses, 208; urban development, patterns, 209; urban uses, shift into, 208; use, regulating, 225–229
Landowners, with recreation enterprises, 193
Land use, in rural-urban areas, regulating, 227–228
Latin America, labor force, expected increase, 292
Latin American Free Trade Association, 266–267, 271
Laura Spelman Rockefeller Foundation, 199
Leather, synthetic, 69
Lee, John E., Jr., 10–19
Lettuce, producing areas, 8
Leukosis, 60–61
Life expectancy, in developed and less developed countries, 287
Lint cotton, exports, 272
Literacy, in developed and less developed countries, 287
Livestock, air-exported, value, 334; and products, cash receipts, 19, 20; diseases, 61; feeding, confinement facilities, 60; feeding, mechanization, 57–61; growers, opposition to price supports, 118; leasing, 14–15; production, in Kenya, 308–309
Looper, J. Don, 236–242
Lowry, Sheldon G., 149–153
Lysine, in cereals, research, 329

Machinery, farm, development, 2–3
Magness-Taylor pressure tester, 91
Malaysian Agricultural Research and Development Institute, 299
Malnutrition, combatting, 124–130; extent in underdeveloped countries, 298
Manley, William T., 94–102
Manufacturers, food, 99
Market, food, achievements, 102
Marketing, farm, cash receipts, 19; farm, changes in, 64–65; farm, increase, 64; food, changes in, 94–102; food, costs, 107–112; margin, measure of costs, 108, 110, 111; orders, 102–107; production process, as integration, 65–66; technology, changes, 70–80
Market news service, in Brazil, 317–318
Markets, farm, changes in, 61–66; terminal, changes in, 99–101
Market socialism, 273
Mayo, Selz C., 173–181
Meat, imports, 260; production, importance of crossbreeding, 59; quality deterioration, prevention, 93–94
Metropolitan Council, 156
Mexican-Americans, life philosophy, 189
Mexico, crop breeding, advances, 293, 294; increased agricultural output, 291; wheat yields, 327
Michigan, education, improving, 162–163
Michigan Public Education Commission, 162–163
Micronaire, 93
Middleton, Gordon K., 328
Migrations, rural, 173
Milk, marketing orders, 106
Miller, Edward C., 57–61
Milo, hybridization, effect on yield, 3; production areas, 7; yields, 7
Moisture, in agricultural products, measuring, 92
Montana Extension Service, 200
Montevideo Treaty, 266, 271
Monthly Crop Report, 113
Moore, Vernon P., 39–46
Most Favored Nation, trade policy, 275–276
Multiple Wavelength Difference Meter, 91–92
Myers, Mardy, 19–25
Mutual Security Acts, 282
McCollum, E. V., 34

National Conservation Needs Inventory, 238
National Inventory of Soil and Water Conservation Needs, 190–191, 192
National Poultry Improvement Plan, 59
National Rice Production Training Center, 315
National School Lunch Act, 124
National School Lunch program, 124, 125
National Wild and Scenic River System, 226
National Wilderness Preservation System, acreage, 221
Near East Foundation, agricultural research in developing countries, 296
Negroes, rural, changes in perspectives of life, 187, 189
Neetz, Roger E., 271–276
Nitrogen, use as fertilizer, 36
Nohre, Carmen O., 263–271
Nourse, Edwin G., 103
Nutrition, new emphasis in food aid programs, 284; of children, programs, 124–126
Nuts, imports, 261
Nygren, Helge, 28

O'Dell, Charles, 70–80
Orange juice, market promotion, 279
Oranges, production, 279
Organization for Economic Cooperation and Development, 348

Paint, manufacturers, use of synthetics, 69

Pakistan, effect of food aid on economic development, 285
Parity ratio, 26
Partain, Lloyd E., 189–196
Pastureland, conservation practices needed, 195
Paul, Allen B., 94–102
Peace, Michael, 34
Peanuts, yield increases, 5
Peas, quality, maintaining, 93
Pesticides, environmental pollutant, extent, 222; need for improvements, 37; role in increased crop yields, 37
pH meter, 93
Philosophies, of life, in America, 182–189
Pickett, Robert C., 330
Pigs, feeder, diseases, 61
Policies, agricultural, developing, 130–134; agricultural goals, 130
Pollution, effect on natural resource quality, 340–342; forms, 222–223
Population, changes, effect on farm market, 61–62; counties, causes of changes, 168–169; farm, decline, 25, 33, 62; growth, effect on food marketing system, 95; in developing countries, relation to food problem, 251–252; in Kenya, growth rate, 311; increase, effect on economic development, 288; rural, proportion, 143; urban, 150; urban geographic area, 208; U.S., 33, 342; world, and adequate food supply, 247–251
Pork, consumption, 113
Potatoes, measuring quality, 91; quality deterioration, prevention, 93; transported, 73; yield increases, 5
Presley-Strength Tester, 93
Price supports, 117–123
Processor, food, effect of convenience foods on, 78
Product specification, new, 6–7
Programs, domestic, need for policy rationale, 173
Protectionism, effects on agriculture exports, 256–257
Protein, adding to diets, 304; amino acid composition, genetic differences, 329; deficiency disease, 329; in cereals, research, 328–329; malnutrition, 327; utilization, in human body, 327–328; worldwide malnutrition, relief projects, 297
Protocol of Basic Grains, 267
Public Law 480, 120, 133, 246, 283; effect on foreign economic development, 284–285
Public services, in rural areas, 158–162; problems, 141–142
Public Works and Economic Development Act, 241
Punjab, of India, agricultural productivity, 290
Purnell Act, 199

Quality, of agricultural products, factors affecting, 93

Rahe, Dewain H., 255–262
Railcars, giant, role in transporting food, 73, 75
Randall, C. Kyle, 19–25
Rangeland, conservation practices needed, 194; reseeded, acres, 193
Rasmussen, Wayne D., 25–31
Recreation, and wildlife areas, acreage, 221
Refractometer, 92
Research, scientific, role in developing new agricultural technologies, 299
Resources, land, competition for, 204–212; natural, meeting future demands, 337–342; preserving, who should pay for, 236–242; residuals, disposal, 341–342
Retailers, food, procurement difficulties, 98
Rice, exporters, 253; new variety, 313; nutritional improvement, research, 329–330; percent moving in international trade, 253; production, in Vietnam, 314–315; production revolution in Asia, 312–316; research, 294; world eating patterns, 252–253; yield rises, 5
Richards, L. A., 36
Robinson, Kenneth L., 117–125
Rockefeller Foundation, agricultural research in developing countries, 293, 294, 295, 301
Rome Treaty, 264
Rubin, George, 200
Rural, defining, 144; meanings, 143–148
Rural Areas Development Program, 133
Ruralites, life philosophy, 185–189
Russell, Orville C., 27
Russia, *see* Soviet Union

Samuel, Louise N., 204–212
Scab, apple, control measures, 47
Scald, in apples, problem, 51; control, 52
Schlebecker, John T., 229–236
School Breakfast Program, 125
School districts, reorganizing, in Michigan, 163
School lunch program, in Brazil, 320
Schools, consolidating, 162–163
Scientists, soils, research on Great Plains, 199
Scott, Robert W., 29–30
"Section 32" funds, 119
Sediment, water pollutant, 222, 242
Seed cotton cleaners, 45
Seed, hybrid, adoption 35
Services, health, in rural areas, 158–160; marketing, effect on costs, 107–108; of local governments, revenue sources, 160, 161; public, in rural areas, 158–162
Settlements, small, saving, 171–173
Sewage systems, in rural areas, 159
Shaffer, James Duncan, 330–333
Shull, G. F., 35
Simpson, Glenn D., 113–117
Slocum, Walter L., 182–189
Smith, Ray F., 326
Soaps, use of synthetics, 69
Society, changes, effect on citizens, 172–173
Soil Bank Act, 241
Soil Bank program, 120
Soil Conservation and Domestic Allotment Act, 240
Soil Conservation Service, creation, 240
Soil Erosion Act, 240
Sorghum, yields, 327
South Korea, effect of food aid on economic development, 285
Soviet Union, agricultural exports and imports, 274; agricultural trade with U.S., 274, 275; economic reform, 272–274; lint cotton exports, 272; sugar exports, 272; vegetable oil exports, 272; wheat imports, 271, 272
Soybeans, and products, exports, 257, 259; change to major crop, 35; increased production, 35; production areas, 7; yield increases, 5; yields, 7
Space, for living, problems, 141
Spain, effect of food aid on economic development, 285
Special Child Food Service Program, 125, 126
Specialty products, U.S. imports, 261
Standard Metropolitan Statistical Areas, 164
Starch, Elmer A., 197–204
Statistical Reporting Service, 113, 116
Storage, environments, for fresh fruit apples, 51–52
Strip cropping, acres covered, 193
Students, rural, effect of inadequate educational services, 158
Sugar, content, measuring, 92; exports, 272; imports, 261; international trade agreements, 269; research beginning, 299
Sugar-acid ratio, 93
Supermarkets, chains, development, 96–98; changes in 96–98
Svobida, Lawrence, 197
Synthetics, as challenge to farm products, 66–70

Taiwan, role in advancing agricultural technology, 302
Tariffs, 260
Tax, income, value to State governments, 161; property, importance to local governments, 160, 161
Technology, agricultural, effects of changes, 352–357; agricultural, evaluating, 37–39; agricultural, for the future, 322–326; effect on natural resource use, 339; farm, effect on population, 62; role in agricultural productivity, 298–307
Tennessee Valley Authority, 240
Third World, development, U.S. assistance, 292–298
Tobacco, exports, 259; imports, 261; yield increases, 5
Tomatoes, measuring quality, 91; producing areas, 8
Towns, incorporated, population, 168; rural, merging to form single community, 175–177
Townships, form of rural government, 155
Tractor, effect on agriculture, 2; horsepower available, 33
Trade, agricultural, barriers, 269–270; agricultural, bilateral agreements, 266; agricultural, U.S.-U.S.S.R., 274–275; East-West, developments, 271–276; in developing countries, relation to economic growth, 245–246; foreign, role in U.S. economy, 255–262; international, agreements, 263–271; policies, goals, 244; promotion programs, 276–281
Trade Agreements Act, 244, 260
Trade fairs, 281
Trains, role in food marketing system, 73
Transportation, role in food marketing system, 71–73
Trees, on farms, acres planted, 193
Triticale, new cereal variety, 330

United Kingdom, regulating imports, 257
United States, foreign trade, 255–262
Universities, U.S., role in developing Brazilian agriculture, 320
Urbanization, effect on eating patterns, 252; effect on population, 62; factors affecting, 209;

land, study results, 209; patterns, 209; relation to population increase, 209
Urea, use in feed rations, 60
U.S.S.R., *see* Soviet Union

Vegetable oil, exports, 272
Vietnam, rice production, limitations, 315; rice production program, 312–316; rice yields, 313; rural population, 312; war, effect on rice production, 312–314
Village, rural, economic role in society, 139–140

Wallace, L. T., 130–134
Walters, Harry E., 271–276
Ward, David, 213–224
Wastes, animal, pollution problem, 223; solid, environmental pollutant, 222–223
Water, for rural communities, obtaining, 177–178; silt pollution, 242
Watershed projects, estimated savings on property damage, 193
Watershed Protection and Flood Prevention Act, 195–196, 240
Watersheds, upstream, problems needing action, 195
Water systems, in rural areas, 159
Weeds, control, in cottonfields, 41
Wessel, Robert I., 154–158
Western Europe, economic development, 250; farming, new methods, 250
Wheat, acre yield, increase, 5; breeding for protein and lysine content, 328–329; exported, amount, 253, 254; imports, 271, 272; role in world diets, 253; trade agreements, 268; world trade patterns, 253–254; yield in 1920, 2; yields, 327
Wheat Trade Convention, 268
White, Bennett S., Jr., 307–312
White House Conference on Food, Nutrition, and Health, 124
Wildlife, habitat, acres improved, 193
Willett, Joseph W., 247–251
Williams, Robin, 182
Wilson, M. L., 199, 201
Wine, imports, 261
Winner, E. B., 276–281
Wissler, Clark, 187
Woodland, and forest, area occupied, 208
Wool, per capita consumption, 64
World Food Program, for multilateral food aid, 282–283

Young Zion-Greenwood Development Association, 178
Youth, rural, reasons for migration, 173–174
Yugoslavia, effect of food aid on economic development, 285

Zoning, enabling legislation, 226–227

FOR SALE BY THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON, D.C. 20402 - PRICE $3.50